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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Thomas Giering

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EXAMINER

DETTINGER, LAURA

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,663	Applicant(s) GIERING ET AL.	
	Examiner Laura Dettinger	Art Unit 4131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04/04/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/04/2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 1-24, are drawn to product, and claims 25-32, are drawn to process of making. No restriction requirement has been made in the current application because the method as claimed, requires merely the elements of the product. If the claims are amended such that the method steps become more detailed to become a distinct invention, then a restriction may be applied to these two groups.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claim 1 is rejected under 35 U.S.C. 112, first paragraph.**

4. The specification, while being enabling for 750-2500nm range for joint emission spectra (pg 2 [0008]), does not reasonably provide enablement for other regions of emission spectra.

5. Claim 1 states that the joint emission region is located “outside the visible spectral region”, and the specification only discloses the range of 750-2500nm, which pertains to the near IR and IR regions of the spectrum, but does not account for any other regions of light (i.e. UV, x-rays, microwaves, etc).

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6. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

7. **Claims 1-32 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling.**

8. Printed matter is required to be printed on a substrate, which is critical or essential to the practice of the invention, but not included in the claims and is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The applicant claims a document of value comprising luminescent substances; however, there is no claim to a substrate or film for the luminescent substances to be applied to.

9. **The following is a quotation of the second paragraph of 35 U.S.C. 112:**

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. **Claims 1, 3, 4, 6, 8, 9, 17, and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

11. **Regarding claim 1**, the applicant states that the emission spectrum of the first luminescent substance is "characteristically complemented" by the emission spectrum

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of the second luminescent substance. This claim language is indefinite since it is not disclosed by the specification what the phrase "characteristically complemented" means in relation to the luminescent substances. Since claim 1 requires that the spectra of the first and second luminescent substances to overlap, it is unclear what the difference is between "characteristically complemented" overlap and other types of overlap.

12. **Regarding claim 3, 4, 6, and 9**, the term "on the basis of" is a relative term which renders the claim indefinite. The term "on the basis" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term "on the basis of" refers to the host lattice and how the luminescent substances are formed on the host lattice. The claim terminology is indefinite in what is meant by "on the basis of", and is not further disclosed in the specification.

13. **Regarding claim 8**, the applicant states that the host lattice is formed by a "mixed crystal", however, there is no explanation of what a "mixed crystal" is, either in the claims or the specification, rendering this claim terminology indefinite.

14. **Regarding claim 9**, the term "differently strong" is a relative term which renders the claim indefinite. The term "differently strong" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the

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invention. The applicant states in claim 9 that the different host lattices have "differently strong" crystal fields, however, neither the specification nor the claims disclose the meaning of the word "strong", therefore making it indefinite.

15. **Regarding claim 17**, the applicant states that the document of value, of claim 1, has at least one luminescent substance printed on to the document of value. The claim language of claim 17 is indefinite because the term document of value is used in the definition for the document of value, creating a redundancy in terminology.

16. **Regarding claim 21**, the term "in particular" is a relative term which renders the claim indefinite. The term "in particular" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The applicant states in claim 21, that the luminescent substances are incorporated in the volume of the document, "in particular" of a substrate of the document of value, however the claim language is indefinite because the luminescent substances could be in either the document of value or the substrate.

Double Patenting

17. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent

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and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

18. Claims 1-16 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-16 of U.S. Patent No. 7927511.

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19. Although the conflicting claims are not identical, they are not patentably distinct from each other because the composition for coding and the value document comprising the composition of coding claimed in U.S. Patent No. 7927511 (US 2007-0202352), suggest the document of value claimed in the application.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claim 25 is rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility.

The claim, as written, is not a method of manufacturing because the claim language “provided” does not involve method steps for manufacturing the document of value, and the claim appears to refer to a product. It is unknown what statutory class this claimed invention is a part of, since it could be seen as a product, process or manufacture as claimed.

Claim 25 is rejected under 35 U.S.C. 112, first paragraph.

Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 25 is rejected under 35 U.S.C. 112, 2nd paragraph. Specifically, the claim is indefinite because the method of making the invention is not clear. The claimed invention is not method of manufacturing because the claim language “provided” does not involve method steps for manufacturing the document of value other than to present the document. Thus, the document is already manufactured.

Claim Rejections - 35 USC § 102

20. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

21. **Claims 1-3, 23-25, and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Gonzalez et al (U.S. 630547).**

Claim 1:

22. Gonzalez et al. teaches in Column 7, lines 50-59, a composition for securing value documents, such as currency, wherein the composition contains a plurality of luminescent dyes which emit outside the visible wavelength range, such as in the range

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of 700-1200nm (col.5, lines 50-56). In Figure 1, Gonzalez et al. teaches five luminescent dyes that overlay with one another and have emission spectra in the range of 750nm-960nm, which is outside the range for the visible spectrum. This reads on applicants' document of value and the limitations set forth in claim 1.

Claim 2:

23. Gonzalez et al. teaches that the luminescent dyes have an emission in the 600-2500nm range, which encompasses the range in the applicants' claim 2 (col. 5, lines 50-53; col. 6, lines 25-29).

Claim 3:

24. In Column 9 lines 19-25, Gonzalez et al. teaches that the luminescent substances can be contained on a carrier medium (host lattice), which reads on applicants' claim 3.

Claims 23 and 24:

25. Gonzalez et al. teaches an embodiment of the invention wherein a multiplicity of luminophores (luminescent substances) which correspond to the selected information items according to an assigned encryption code are selected and placed in a location on the article (col. 8, lines 51-67). The encryption code can be indicative of information such as manufacturer, year of manufacture, lot number of product, etc. (col. 9, lines 5-11). This reads on applicants claims 23 and 24.

Claim 25:

26. In claim 25, the applicant claims a method for providing a document of value with a pair of luminescent substances with the claim limitations of claim 1, but does not provide actual method steps. Gonzalez et al. further teaches an embodiment of the invention wherein the luminophores (luminescent substances) are useful in marking paper currency, copyrighted works of authorship and applied to such documents of value, which reads on applicants' claim 25.

Claim 31:

27. In Column 7 lines 4-7, Gonzalez et al. teaches one embodiment of the invention that is useful as marking labels (self-supporting transfer element), which reads on applicants' claim 31.

Claim Rejections - 35 USC § 103

28. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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29. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

30. **Claims 10-16, and 32 are rejected under 35 U.S.C 103(a) as being unpatentable over Gonzalez et al. (US 6380574).**

Gonzalez et al. teaches all the limitations of claim 1 in section 18 above.

Claims 10-14

31. Gonzalez et al. further teaches, in Figure 1, that the overlap of two luminescent dyes (substances) with emission regions between 750nm and 1000nm and pairs which emit in the overlapping ranges of about 760nm-800nm, about 810nm-820nm, 890nm-930nm, with the overlapping regions have a width that is less than 100nm, which reads on applicants claims 10 and 11. Gonzalez et al. further teaches, in Figure 1, that one of the luminescent dyes (substances) has a line outside of the overlapping region, which also lies outside of the visible spectral region, which reads on applicants claims 13 and 14.

It would have been obvious to someone with ordinary skill in the art at the time of the invention to use the teachings of Gonzalez et al. in a document of value for applying higher order security elements that are more resistant to forgery.

Claims 15 and 16

32. Gonazalez et al further teaches the application of a plurality of luminophores (luminescent substances), known as a chemical signature, that have emissions at different wavelengths in a predetermined portion of the spectrum and can be applied to an article or document (col. 7, lines 49-56) , which reads on applicants claims 15 and 16.

It would have been obvious to someone of ordinary skill in the art at the time of the invention to use a plurality of luminophores (luminescent substances) for a chemical signature as taught by Gonzalez et al. in a document of value, wherein the more complex the chemical signature is, the more difficult it would be for a counterfeiter to replicate (col. 8, lines 10-14), which reads on the applicants' invention.

Claim 32

33. Gonzalez et al. teaches that the invention for tagging an article with luminophores (luminescent substances) wherein the characterizing peak is in the 600nm to 2500nm spectral range (col.4, lines 13-15), which covers the infrared spectral region above 1100nm, reading on applicants' claim 32.

It would have been obvious to someone of ordinary skill in the art at the time of the invention to use luminophores with peaks in the infrared spectra taught by Gonzalez et al. in a document of value, such that the luminophores were optically invisible and difficult to detect, which suggests the claimed invention.

34. Claims 4-8, 17, 27, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gonzalez et al. (U.S. 6380574), in view of Kaule et al. (U.S. 4452843).

Gonzalez et al. teaches all the limitations of claim 1 in section 18 above, however, it does not teach that the host lattice is doped with rare earth metals or chromophores.

Claims 4 and 5:

35. Kaule et al. teaches a security paper with luminescent substances on host lattices doped with rare earth metals, particularly those elements with the atomic number 58-71, with preferred elements being erbium, holmium, thulium and dysprosium (col. 2, lines 61-64; col. 5, lines 8-11). This reads on applicants' claims 4 and 5.

It would have been obvious to someone of ordinary skill in the art at the time of the invention to use the rare metals taught by Kaule et al. with the host lattice of the security paper taught by Gonzalez et al. as a technique for creating a security element that is difficult to detect by the visible eye or to counterfeit.

Claims 6 and 7:

36. Kaule et al. further teaches a host lattice doped with a transition metal, or chromophore, which reads on applicants' claim 6 (col. 3, lines 5-8, 57-60).

It would have been obvious to someone of ordinary skill in the art at the time of the invention to combine the host lattice doped with a transition metal taught by Kaule et al. with the host lattice of the document of value taught by Gonzalez et al. as an approach to enhancing the absorbing properties of the host lattice in the visible region. It would also be obvious to someone with ordinary skill in the art to utilize two or more chromophores in the host lattice to create different effects on the security paper, thus enhancing the security of the document, and this reads on applicants' claim 7.

Claim 8:

37. Kaule et al. further teaches a host lattice with a perovskite or garnet structure (col. 5, lines 13-54). Garnet and perovskite are both compounds with crystal structures, and interpreted as being crystals formed on the host lattice. Kaule et al. also teaches a "mixed garnet" host lattice, which is interpreted as a "mixed crystal" host lattice (col. 5 lines 56-64; col. 6, lines 1-9), this reads on applicants' claim 8.

The applicant states in the specification that the host lattice can have, for example, a perovskite or garnet structure, and at least one of the host lattices can be formed by a mixed crystal, however, they do not disclose what a mixed crystal is, and therefore the examiner is interpreting that the mixed garnet taught by Kaule et al. is an example of a mixed crystal as stated by the applicant.

It would have been obvious to one with ordinary skill in the art at the time of the invention to use the crystal or mixed crystal host lattice taught by Kaule et al. with the

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host lattice for the security paper taught by Gonzalez et al. as a way of providing a different security effect for the host lattice containing the luminescent substances.

Claims 17, 27, 29 and 30:

38. Kaule et al. further teaches that luminophores (luminescent substances) are included in security papers as paper additions or insertions, for example mottling fibers, security threads or printing inks (col.1, lines 54-56), which reads on applicants' claims 17, 27, 29 and 30.

It would have been obvious to someone of ordinary skill in the art at the time of the invention to utilize the role of luminescent substances taught by Kaule et al. with the security paper taught by Gonzalez et al. as a way of creating the document of value claimed by the applicant.

39. **Claims 18-21, 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gonzalez et al. (U.S. 6380574), in view of Kaule et al. (U.S. 4451521).**

Gonzalez et al. teaches all the limitations of claim 1 as stated in section 18 above, however, it does not teach that the luminescent substances are jointly printed onto the document of value, cotton paper, and plastic foil or incorporated into the volume of the document of value.

Claims 18, 20, 21, 26 and 28:

40. Kaule et al. teaches a security paper in that the luminophores (luminescent substance), can be applied as a mixture in a printing ink or into the security paper as layers to a security thread foil (col. 6, lines 16-27), which reads on applicants' claims 18 and 20. Bank notes are known in the art to typically be made of cotton paper, and therefore an obvious embodiment for the invention and reads on applicants claim 19. Kaule et al. further teaches in Column 8 lines 45-53 that the luminescence material can be incorporated by addition to the pulp of a paper prepared during its manufacture or as a layer of the laminate (coating), which reads on applicants' claims 21, 26 and 28.

It would have been obvious to someone of ordinary skill in the art at the time of the invention to use the applications of the luminophores (luminescent substances) taught by Kaule et al. with the security paper taught by Gonzalez et al. to create the document of value claimed by the applicant.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura Dettinger whose telephone number is (571)270-5624. The examiner can normally be reached on Mon-Fri; 8-4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Ruthkosky can be reached on (571)272-1291. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/L. D./
Examiner, Art Unit 4131

/Mark Ruthkosky/
Supervisory Patent Examiner
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